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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,688	11/15/2001	Frank Ament	GP-301097	2570

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EXAMINER

GREENE, JASON M

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 05/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .		Applicant(s)	
	10/003,688		AMENT ET AL.	
	Examiner		Art Unit	
	Jason M. Greene		1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.84(u)(1) because they view numbers have not been preceded by the abbreviation "FIG.". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: The word "chordierite" in page 4, lines 22 and 25 should be changed to the word "cordierite".

Appropriate correction is required.

Claims

3. With regard to claim 7, the Examiner suggests Applicants change the word "chordierite" in line 2 to the word "cordierite"

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4. With regard to claim 4, the Examiner notes that the limitation “the lengths of the channels of the particulate trap” has been interpreted to mean that the particulate trap comprises a plurality of axially extending channels.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Yonemura et al.

With regard to claims 1 and 5, Yonemura et al. discloses a particulate filter (1) for an internal combustion engine comprising a microwave source (11) generating microwaves, microwave adsorbing materials (silicon carbide) to adsorb said microwaves and generate heat, and a particulate trap (1a) trapping particulates

generated by the engine, said particulate trap heated by said microwave adsorbing materials to burn off said particulates in Figs. 1-6 and col. 2, line 34 to col. 10, line 11.

With regard to claim 2, Yonemura et al. discloses the microwave adsorbing materials being configured as an end plug (3a) in Figs. 1-3 and col. 3, lines 4-53 and col. 4, line 28 to col. 6, line 10.

With regard to claim 6, Yonemura et al. discloses the particulate trap being comprised of a microwave transparent material (aluminosilicate) in col. 3, lines 4-18.

7. Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Blackwell et al.

With regard to claims 1 and 5, Blackwell et al. discloses a particulate filter (10) for an internal combustion engine comprising a microwave source (not shown) generating microwaves, microwave adsorbing materials (20) to adsorb said microwaves and generate heat, and a particulate trap (12) trapping particulates generated by the engine, said particulate trap heated by said microwave adsorbing materials to burn off said particulates, wherein said microwave adsorbing material is silicon carbide in Figs. 1-4 and col. 2, line 43 to col. 10, line 36.

With regard to claim 3, Blackwell et al. discloses the microwave adsorbing material (20) being configured as axial bands distributed along channels of said particulate trap in Figs. 1, 4, 7, and 10 and col. 5, line 10 to col. 6, line 33. When the filter sheet (16) and the corrugation sheet (18) are wound around the mandrel (14) to form the filter element, the microwave adsorbing material (20) will be configured as axial bands distributed along channels of said particulate trap.

With regard to claim 6, Blackwell et al. discloses the particulate trap being comprised of a microwave transparent material (alumina silicate) in col. 5, lines 57-65.

8. Claims 1, 4, 6, and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by He et al.

With regard to claims 1 and 4, He et al. discloses a particulate filter for an internal combustion engine comprising a microwave source generating microwaves, microwave adsorbing materials to adsorb said microwaves and generate heat, and a particulate trap trapping particulates generated by the engine, said particulate trap heated by said microwave adsorbing materials to burn off said particulates, wherein said microwave adsorbing material is deposited in substantially linear fashion along the length of the channels of the particulate trap in col. 2, line 50 to col. 7, line 57.

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With regard to claims 6 and 7, He et al. discloses the particulate trap being comprised of the microwave transparent material cordierite in col. 2, line 38 and col. 3, lines 59-61.

9. Claims 8, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Yonemura et al.

With regard to claim 8, Yonemura et al. discloses a method of regenerating a particulate trap (1) comprising generating microwave radiation (11), and adsorbing microwaves to generate heat to burn particulates in the particulate trap in Figs. 1-6 and col. 2, line 34 to col. 10, line 11.

With regard to claim 10, Yonemura et al. discloses the method further comprising the step of configuring microwave adsorbent material as end plugs (3a) in the particulate trap in Figs. 1-3 and col. 3, lines 4-53 and col. 4, line 28 to col. 6, line 10.

With regard to claim 11, Yonemura et al. discloses the method further comprising the step of controlling the temperature of the particulate trap by controlling the microwave radiation in Figs. 1-6 and col. 2, line 34 to col. 10, line 11. The controlling of the microwave radiation is accomplished by alternatively activating and deactivating the microwave generator (11).

10. Claims 8 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Blackwell et al.

With regard to claim 8, Blackwell et al. discloses a method of regenerating a particulate trap (10) comprising generating microwave radiation, and adsorbing (20) microwaves to generate heat to burn particulates in the particulate trap in Figs. 1-4 and col. 2, line 43 to col. 10, line 36.

With regard to claim 11, Blackwell et al. discloses the method further comprising the step of controlling the temperature of the particulate trap by controlling the microwave radiation in col. 2, line 43 to col. 10, line 36. The controlling of the microwave radiation is accomplished by alternatively activating and deactivating the microwave generator.

11. Claims 8, 9, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by He et al.

With regard to claim 8, He et al. discloses a method of regenerating a particulate trap comprising generating microwave radiation, and adsorbing microwaves to generate heat to burn particulates in the particulate trap in col. 2, line 50 to col. 7, line 57.

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With regard to claim 9, He et al. discloses the method further comprising the step of depositing microwave absorbent material along walls of the particulate trap in col. 2, line 50 to col. 7, line 57.

With regard to claim 11, He et al. discloses the method further comprising the step of controlling the temperature of the particulate trap by controlling the microwave radiation in col. 2, line 50 to col. 7, line 57. The controlling of the microwave radiation is accomplished by alternatively activating and deactivating the microwave generator.

12. Claims 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Yonemura et al.

With regard to claim 12, Yonemura et al. discloses a system for removing particulates in a particulate trap (1a) comprising a microwave power source (not shown, part of 11), a microwave antenna (not shown, part of 11), coupled to said power source for generating microwaves, a microwave wave guide (12) operatively coupled to said microwave antenna to guide said microwaves, and microwave adsorbent material (silicon carbide) located in said particulate trap, wherein said microwaves are incident upon said microwave adsorbent material to generate heat to burn off particulates located in said particulate trap in Figs. 1-6 and col. 2, line 34 to col. 10, line 11.

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With regard to claim 13, Yonemura et al. discloses the system further comprising a diesel engine coupled to said particulate trap, wherein diesel exhaust propagates through said particulate trap in col. 1, lines 10-16.

13. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Yonemura et al.

Yonemura et al. discloses a method of initiating regeneration in a particulate trap comprising the steps of locating microwave adsorbing material (silicon carbide) in a particulate trap (1a) in areas that particulates build up, generating microwaves (11), adsorbing microwaves with the microwave adsorbing material, and controlling the microwaves to initiate a burn-off of particulates in Figs. 1-6 and col. 2, line 34 to col. 10, line 11. The controlling of the microwave radiation is accomplished by alternatively activating and deactivating the microwave generator (11).

14. Claim 14 is rejected under 35 U.S.C. 102(e) as being anticipated by Blackwell et al.

Blackwell et al. discloses a method of initiating regeneration in a particulate trap comprising the steps of locating microwave adsorbing material (20) in a particulate trap (10) in areas that particulates build up, generating microwaves, adsorbing microwaves with the microwave adsorbing material, and controlling the microwaves to initiate a burn-off of particulates in Figs. 1-4 and col. 2, line 43 to col. 10, line 36. The controlling

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of the microwave radiation is accomplished by alternatively activating and deactivating the microwave generator.

15. Claim 14 is rejected under 35 U.S.C. 102(e) as being anticipated by He et al.

He et al. discloses a method of initiating regeneration in a particulate trap comprising the steps of locating microwave adsorbing material in a particulate trap in areas that particulates build up, generating microwaves, adsorbing microwaves with the microwave adsorbing material, and controlling the microwaves to initiate a burn-off of particulates in col. 2, line 50 to col. 7, line 57. The controlling of the microwave radiation is accomplished by alternatively activating and deactivating the microwave generator.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yonemura et al. or Blackwell et al. as applied to claim 6 above, and further in view of He et al.

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Yonemura et al. and Blackwell et al. do not disclose the microwave transparent material being cordierite.

He et al. discloses a similar particulate trap wherein the microwave transparent material is cordierite in col. 2, line 38 and col. 3, lines 59-61.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the microwave transparent cordierite of He et al. for the microwave transparent ceramics of Yonemura et al. and Blackwell et al. in that such are alternate ceramic materials in the art for forming microwave transparent particulate filters, mere substitution of one known microwave transparent ceramic filter material for another in the art being within the scope of one having ordinary skill in the art.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Nobue et al., Walton et al., Peters et al., Nixdorf, Ma, and Allie et al. references disclose similar regenerable particulate filters.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (703) 308-6240. The examiner can normally be reached on Tuesday - Friday (7:00 AM to 5:30 PM).

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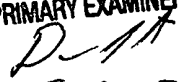
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jason M. Greene
Examiner
Art Unit 1724



DUANE SMITH
PRIMARY EXAMINER


5-15-03

jmg
May 14, 2003